

Appendix K
Environmental Regulations, Standards, and Orders

This page intentionally left blank

Table K-1
Department of Energy Radiation Protection Standards
and Derived Concentration Guides¹

Effective Dose Equivalent Radiation Standard for Protection of the Public

*Continuous exposure of any member of the public from routine activities:
All exposure pathways = 100 mrem/year (1 mSv/yr) effective dose equivalent*

**Department of Energy Derived Concentration Guides (DCGs) for
Inhaled Air or Ingested Water ($\mu\text{Ci/mL}$)**

<i>Radionuclide</i>	<i>Half-life^{2,3} (years)</i>	<i>In Air</i>	<i>In Water</i>	<i>Radionuclide</i>	<i>Half-life^{2,3} (years)</i>	<i>In Air</i>	<i>In Water</i>
H-3*	1.23E+01	1E-07	2E-03	Eu-152	1.36E+01	5E-11	2E-05
C-14*	5.73E+03	6E-09	7E-05	Eu-154*	8.80E+00	5E-11	2E-05
K-40	1.28E+09	9E-10	7E-06	Eu-155	4.96E+00	3E-10	1E-04
Fe-55	2.70E+00	5E-09	2E-04	Th-232	1.40E+10	7E-15	5E-08
Co-60*	5.27E+00	8E-11	5E-06	U-232*	7.20E+01	2E-14	1E-07
Ni-59	7.50E+04	4E-09	7E-04	U-233*	1.59E+05	9E-14	5E-07
Ni-63	1.00E+02	2E-09	3E-04	U-234*	2.44E+05	9E-14	5E-07
Sr-90*	2.86E+01	9E-12	1E-06	U-235*	7.04E+08	1E-13	6E-07
Y-90	7.31E-03	1E-09	1E-05	U-236*	2.34E+07	1E-13	5E-07
Zr-93	1.53E+06	4E-11	9E-05	U-238*	4.47E+09	1E-13	6E-07
Nb-93m	1.46E+01	4E-10	3E-04	Np-239	6.45E-03	5E-09	5E-05
Tc-99*	2.13E+05	2E-09	1E-04	Pu-238*	8.78E+01	3E-14	4E-08
Ru-106	1.01E+00	3E-11	6E-06	Pu-239*	2.41E+04	2E-14	3E-08
Cd-113m	1.37E+01	8E-12	9E-07	Pu-240*	6.57E+03	2E-14	3E-08
Sn-126	1.00E+05	1E-10	8E-06	Pu-241	1.44E+01	1E-12	2E-06
Sb-125	2.77E+00	1E-09	5E-05	Am-241*	4.32E+02	2E-14	3E-08
Te-125m	1.59E-01	2E-09	4E-05	Am-242m	1.52E+02	2E-14	3E-08
I-129*	1.57E+07	7E-11	5E-07	Am-243	7.38E+03	2E-14	3E-08
Cs-134	2.06E+00	2E-10	2E-06	Cm-243	2.85E+01	3E-14	5E-08
Cs-135	2.30E+06	3E-09	2E-05	Cm-244	1.81E+01	4E-14	6E-08
Cs-137*	3.02E+01	4E-10	3E-06	Gross Alpha	NA	2E-14	3E-08
Pm-147	2.62E+00	3E-10	1E-04	(as Am-241)			
Sm-151	9.00E+01	4E-10	4E-04	Gross Beta	NA	9E-12	1E-06
				(as Sr-90)			

¹ DOE Order 5400.5 (February 8, 1990). Effective May 8, 1990. (See Derived Concentration Guides [p. 1-5] in Chapter 1, Environmental Program Information.)

² U.S. Department of Energy. 1981. Radioactive Decay Tables. Washington, D.C.: Technical Information Center, U.S. Department of Energy.

³ Shleien, B. et al. 1998. Handbook of Health Physics and Radiological Health Safety. 3rd ed. Baltimore, Maryland: Williams & Wilkins.

* Radionuclides measured in WVDP effluent.

NA - Not applicable.

Table K-2
Environmental Regulations, Orders, and Standards

The following environmental standards and laws are applicable, in whole or in part, to the West Valley Demonstration Project. Although the list covers the major activities at the West Valley Demonstration Project, it does not constitute a complete enumeration.

Atomic Energy Act of 1954, 42 USC §2011 et seq.

Clean Air Act (CAA). Pub. L. No. 84-159. 42 USC §7401 et seq., as amended, and implementing regulations.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Pub. L. No. 96-510. 42 USC §9601 et seq. (including Superfund Amendments and Reauthorization Act of 1986), and implementing regulations.

DOE Order 231.1. September 30, 1995. Environment, Safety, and Health Reporting, including Change 2 (November 7, 1996).

DOE Order 232.1A. August 1, 1997. Occurrence Reporting and Processing of Operations Information.

DOE Order 414.1A. September 29, 1999. Quality Assurance, including Change 1 (July 12, 2001).

DOE Order 435.1. July 9, 1999. Radioactive Waste Management, including Change 1 (August 28, 2001).

DOE Order 451.1B. October 26, 2000. National Environmental Policy Act Compliance Program, including Change 1 (September 28, 2001).

DOE Order 5400.1. November 9, 1988. General Environmental Protection Program, including Change 1 (June 29, 1990).

DOE Order 5400.5. February 8, 1990. Radiation Protection of the Public and the Environment, including Change 2 (January 7, 1993).

DOE Order 5480.4. May 15, 1984. Environmental Protection, Safety, and Health Protection Standards, including Change 4 (January 7, 1993).

DOE Regulatory Guide DOE/EH-0173T. January 1991. Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance.

Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986. Pub. L. No. 99-499. 42 USC §11001 et seq., and implementing regulations.

Table K-2 (concluded)
Environmental Regulations, Orders, and Standards

Endangered Species Act. Pub. L. No. 93-205. 16 USC §1531-1544.

Environmental Conservation Law of New York State and implementing regulations (NYCRR).

Executive Order 11988. *Floodplain Management.*

Executive Order 11990. *Protection of Wetlands.*

Executive Order 12856. *Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements.*

Executive Order 13101. *Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition.*

Executive Order 13148. *Greening the Government Through Leadership in Environmental Management.*

Federal Water Pollution Control Act (Clean Water Act [CWA]). Pub. L. No. 95-217. 33 USC §1251 *et seq.*, as amended, and implementing regulations.

Resource Conservation and Recovery Act (RCRA). Pub. L. No. 94-580. 42 USC §6901 *et seq.*, as amended, and implementing regulations.

National Environmental Policy Act (NEPA) of 1969. Pub. L. No. 91-190. 42 USC §4321 *et seq.*, as amended, and implementing regulations.

National Historic Preservation Act of 1966. Pub. L. No. 102-575. 16 USC §470.

Toxic Substances Control Act (TSCA). Pub. L. No. 94-469. 15 USC §2601 *et seq.*, as amended, and implementing regulations.

Safe Drinking Water Act (SDWA). Pub. L. No. 93-523. 42 USC §300f *et seq.*, as amended, and implementing regulations.

Water quality standards contained in the State Pollutant Discharge Elimination System (SPDES) permit issued for the facility are listed in Table G-1. Airborne emissions are regulated by the Environmental Protection Agency under the National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR §61 Subpart H (December 15, 1989).

This page intentionally left blank